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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/348,169	07/07/1999	YASUHARU YOSHIDA	FQ5-404	4848

21254 7590 04/15/2004
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EXAMINER

LY, NGHI H

ART UNIT PAPER NUMBER

2686

DATE MAILED: 04/15/2004

2/B

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/348,169

Applicant(s)

YOSHIDA, YASU HARU

Examiner

Ngh H. Ly

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 40 and 41 is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 13, 14, 20-24, 30-35 and 42-50 is/are rejected.
- 7) ☒ Claim(s) 5-7, 9-12, 15-19, 25-29 and 36-39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 8, 13, 14, 20, 21, 30, 31, 34, 35 and 42-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Amico et al (US 5,127,100) in view of D'Amico et al (US 5,159,593) and further in view of Gitlits (US 5,859,841) and Barlett et al (US 5,557,603).

Regarding claims 1, 4, 13, 35 and 42-50, D'Amico et al (US 5,127,100) teaches an automobile communications method for an onboard mobile station in a plurality of radio zones (see abstract) which are consecutively arranged along a road (see fig.1 see cells 22 to 26), comprising: providing each of the radio zones with a plurality of communication frequencies (see column 3, lines 25-26) and switching between the plurality of communication frequencies using a time division scheme (see column 1, lines 17-19 and column 6, lines 24-26, D'Amico et al (US 5,127,100) inherently teaches switching between the plurality of communication frequencies using a time division scheme, see column 3, lines 45-47, which clearly states "They can be dynamically changed under the control of central controller 30 based upon communication requirements. The frequency, bit rate and/or time slots of one or more cells can be independently controlled"), and a different time slot is allocated for adjacent radio zones

(see column 3, lines 36-42) for each of the plurality of communication frequencies (see column 3, lines 25-26),

D'Amico et al (US 5,127,100) does not specifically disclose switching a time slot allocated to the on-board mobile station to continuously communicate with the on-board mobile station across the plurality of radio zones.

D'Amico et al (US 5,159,593) teaches switching a time slot allocated to the on-board mobile station to continuously communicate with the on-board mobile station across the plurality of radio zones (see column 4 lines 21-24).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of D'Amico et al (US 5,159,593) into the system of D'Amico et al (US 5,127,100) in order to reduce channel usage and save bandwidth by each base station.

The combination of D'Amico (US 5,127,100) and D'Amico (US 5,159,593) does not specifically disclose switching between the plurality of communication frequencies within each of the radio zones using a time division scheme.

Gitlits teaches switching between the plurality of communication frequencies within each of the radio zones (see column 1, lines 47-59) using a time division scheme (see column 6, lines 34-50).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of Gitlits into the system of D'Amico et al (US 5,127,100) and D'Amico et al (US 5,159,593) in order to reduce co-channel interference.

The combination of D'Amico (US 5,127,100) and D'Amico (US 5,159,593) and Gitlits does not specifically disclose communication between the plurality of radio zones and the on-board mobile station is made using a single frequency within at least a single radio zone.

Barlett teaches communication between the plurality of radio zones and the on-board mobile station is made using a single frequency within at least a single radio zone (see column 4 lines 12-16).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of Barlett into the system of D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593) and Gitlits so that the mobile station can handover without a change of frequency (see Barlett, column 4 lines 12-16).

Regarding claims 2, 3 and 14, the combination of D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593), Gitlits and Barlett further teaches the time slot used for communication with the on-board mobile station is switched in such a manner that communication with the on-board mobile station (see D'Amico et al (US 5,159,593) column 4, lines 21-24) is continuously performed at one of the plurality of communication frequencies over the plurality of radio zones (see D'Amico et al (US 5,127,100), column 3, lines 36-42 or column 6, lines 24-26).

Regarding claims 8 and 31, D'Amico et al (US 5,127,100) further teaches each of the predetermined communication frequencies is used for both transmission and

reception to perform communication with the on-board mobile station (see column 6 lines 22-24) according to TDMA/TDD scheme (see column 3, lines 62-65).

Regarding claims 20 and 30, D'Amico et al (US 5,127,100) further teaches the on-board mobile station comprises frequency-in-use regenerator (see fig.2 box 60) for regenerating the one of the plurality of communication frequencies from a signal received from a fixed station which forms a radio zone for communication (see column 3, lines 25-26), and a communication controller controlling communication with the fixed station using the allocated time slot at the one of the plurality of communication frequencies (see column 6, lines 19-28).

Regarding claim 21, D'Amico et al (US 5,127,100) further teaches each of the plurality of communication frequencies is used for transmission and reception (see D'Amico et al (US 5,127,100) column 3, lines 25-26), and the communication controller carries out communication with the fixed station according to a TDMA/TDD scheme (see column 3, lines 62-65).

Regarding claim 34, D'Amico et al (US 5,127,100) further teaches the predetermined conversion of the converter is the same as a predetermined conversion for generating a reception local signal from a transmission frequency at each fixed station (see D'Amico et al (US 5,127,100) column 6 lines 19-28).

3. Claims 22-24, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Amico et al (US 5,127,100) in view of D'Amico et al (US 5,159,593)

and in view of Gitlits (US 5,859,841) and further in view of Barlett et al (US 5,557,603) and Janesch et al (US 6,072,842).

Regarding claims 22, 23, 32 and 33, the combination of D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593), Gitlits and Barlett teaches each of the plurality of communication frequencies is used for transmission and reception frequencies (see D'Amico et al (US 5,127,100), column 3, lines 25-25) and wherein the communication controller carries out communication with the fixed station according to a TDMA/TDD scheme (see D'Amico et al (US 5,127,100), column 2 lines 63-65) using the oscillation frequency as a transmission local frequency (see rejection of claims 8 and 16 above) and frequency-in-use regenerator (see D'Amico et al (US 5,127,100), fig.2 box 60).

The combination of D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593) Gitlits and Barlett does not specifically disclose the regenerator comprises: a demodulator for demodulating the received signal and a phase controller for performing phase control on a signal of an oscillation frequency based on an output of the demodulator such that the demodulator acquires synchronization.

Janesch teaches the regenerator comprises: a demodulator for demodulating the received signal (see fig.1, box 196) and a phase controller for performing phase control on a signal of an oscillation frequency based on an output of the demodulator such that the demodulator acquires synchronization (see fig.1, 165 and see column 5, lines 35-38).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of Janesch into the system of D'Amico et al (US 5,159,593), D'Amico et al (US 5,127,100), Gitlits and Barlett in order to provide a carrier-recovery loop with a reduced acquisition time (see Janesch, column 2, lines 22-23).

Regarding claim 24, D'Amico et al (US 5,127,100) further teaches the predetermined conversion of the converter is the same as a predetermined conversion for generating a reception local signal from a transmission frequency at each fixed station (see D'Amico et al (US 5,127,100), column 6 lines 19-28).

Allowable Subject Matter

4. Claims 40 and 41 are allowed.

See the previous Office action (dated 10/24/2003, paper number 21).

5. Claims 5-7, 9-12, 15-19, 25-29 and 36-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

See the previous Office action (dated 10/24/2003, paper number 21).

Response to Arguments

6. Applicant's arguments with respect to claims 1-4, 8, 13, 14, 20-24, 30-35 and 42-50 have been considered but are moot in view of the new ground(s) of rejection.

On page 24 of applicant's remarks, applicant argues that the D'Amico et al. '593 reference does not provide any motivation for any system which might not use such a time slot allocation process to be modified to use a time slot allocation process.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to do so found in the knowledge generally available to one of ordinary skill in the art in order to reduce channel usage and save bandwidth by each base station.

On pages 25-28 of applicant's remarks, applicant argues that the D'Amico et al. '100 and D'Amico et al. '593 reference does not teach or suggest simultaneously providing each of the radio zones with a plurality of communication frequencies.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Gitlits teaches simultaneously providing each of the radio zones with a plurality of communication frequencies. In addition, applicant's attention is directed to the rejection of claim 1 above.

On page 30 of applicant's remarks, applicant argues that the Gitlits reference does not teach switching using time division scheme.

In response, by D'Amico et al. '100 teaches switching using time division scheme (not Gilits).

On page 31 of applicant's remarks, applicant argues that the Gitlits reference does not teach switching between the plurality of communication frequencies within each of the radio zones using a time division scheme.

The examiner, however, disagrees. Gitlits does indeed teach switching between the plurality of communication frequencies within each of the radio zones using a time division scheme (see Gitlits, column 1, lines 47-60). In addition, applicant's attention is directed to the rejection of claim 1 above.

On pages 32-34 of applicant's remarks, applicant further argues that none of the applied references teach or suggest the combination of features of the present invention including: 1) switching between a plurality of communication frequencies within each radio zone using a time division scheme; 2) such that a different time slot is allocated for each adjacent radio zone for each of the plurality of communication frequencies, let alone these features in combination with 3) adjacent radio zones using the same communication frequency but with different time slots; 4) switching the time slot allocated to the on-board mobile station to continuously communicate at one of the communication frequencies at one of the plurality of frequencies.

The examiner, however, disagrees. The combination of D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593), Gitlits and Barlett does indeed teach the

above claimed limitations. In addition, applicant's attention is directed to the rejection of claims 1, 4, 13 and 45-50 above.

On pages 33-34 of applicant's remarks, applicant further argues Janesch does not teaches teach or suggest the combination of features of the present invention including: 1) switching between a plurality of communication frequencies within each radio zone using a time division scheme; 2) such that a different time slot is allocated for each adjacent radio zone for each of the plurality of communication frequencies, let alone these features in combination with 3) adjacent radio zones using the same communication frequency but with different time slots; 4) switching the time slot allocated to the on-board mobile station to continuously communicate at one of the communication frequencies at one of the plurality of frequencies.

The examiner, however, disagrees. The combination of D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593), Gitlits and Barlett does indeed teach the above claimed limitations (not Janesch), and the combination of D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593), Gitlits, Barlett and Janesch teaches applicant's claimed invention. In addition, applicant's attention is directed to the rejection of claims 1, 4, 13 and 45-50 above.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (703) 605-5164. The examiner can normally be reached on 8:30 am-5:30 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghi H. Ly

(Signature)
04/09/04

Marsha D Banks-Harold
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